As Needed Radiation Shielding - System In Package Radiation Shielding

Completed Technology Project (2017 - 2018)

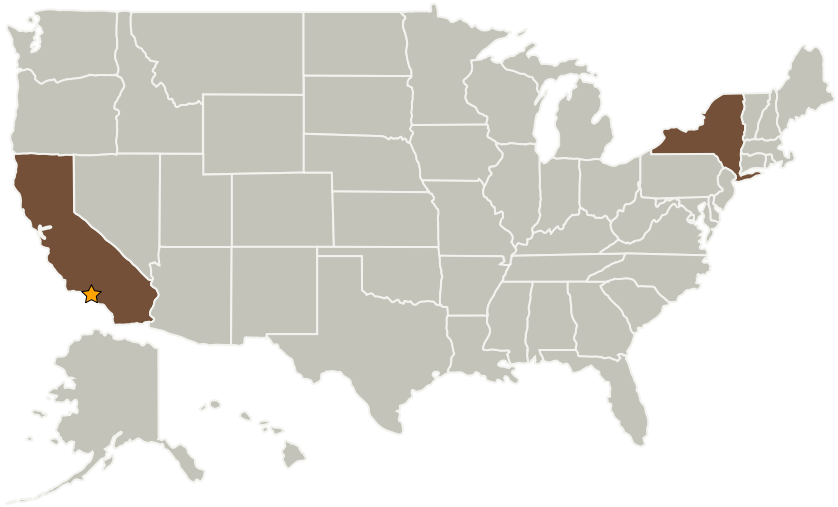
Project Introduction

Develop an as needed radiation shielding technology thereby reducing the need for an electronic vault.

Anticipated Benefits

The benefits of spot shielding analyzed for this task include reduced electronic vault (radiation shielding) mass and the possibility of distribution of electronics. These benefits are particularly critical for low-mass missions to high radiaton environments. The approach is under consideration for elements of the Europa Lander.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Jet Propulsion Laboratory(JPL)	Lead Organization	NASA Center	Pasadena, California
I3 Electronics, Inc.	Supporting Organization	Industry	

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Primary U.S. Work Locations	
California	New York

Project Transitions

October 2017: Project Start

September 2018: Closed out

Closeout Summary: In this task, the as-needed spot shielding for System-In-Package (SiP) radiation technique developed under NASA's COLDTECH program was evaluated as to its effectiveness as a technique for shielding similar SiP modules in other subsystems. Radiation testing showed the effectiveness of the approach which is now at TRL 5.

Project Website:

https://www.nasa.gov/directorates/spacetech/innovation_fund/index.html#.VC

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Jet Propulsion Laboratory (JPL)

Responsible Program:

Center Innovation Fund: JPL CIF

Project Management

Program Director:

Michael R Lapointe

Program Manager:

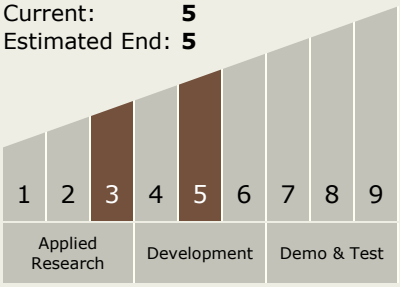
Fred Y Hadaegh

Principal Investigator:

Gary S Bolotin

Technology Maturity (TRL)

Start: **3**
Current: **5**
Estimated End: **5**



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Technology Areas

Primary:

- TX06 Human Health, Life Support, and Habitation Systems
  - TX06.5 Radiation
    - TX06.5.3 Protection Systems

Target Destinations

Mars, Others Inside the Solar System